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ABSTRACT

Sixteen vocational education evaluation problems which indicate the present situation in the states are discussed, and alternative solutions to them are suggested in this report. Each problem represents a situation that should be remedied or a need that must be met and was found to be common to a number of states attempting to develop or improve their system of vocational education evaluation. Both the problems and alternative solutions are largely drawn from (1) the personal experience of the author in implementing and operating a state evaluation system; (2) the experience of providing technical evaluation assistance to several states; (3) consultation, conversation, and survey of a number of state evaluation coordinators; and (4) the input of the author's evaluation colleagues. Problems are operational, procedural, and content-oriented. More specific topics concern follow-through, communication of results, systemization of evaluation efforts, employer cooperation, information utilization, effectiveness of the evaluation system, and emphasis on outcome evaluation. Following a discussion of each problem, two to six alternative solutions are listed with their respective advantages and disadvantages. Recommendations and observations specific to the problem and its alternatives then follow. (YLB)

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Research and Development Series No. 182

VOCATIONAL EDUCATION EVALUATION:

PROBLEMS, ALTERNATIVES, RECOMMENDATIONS

William W. Stevenson

The National Center for Research in Vocational Education
The Ohio State University
Columbus, Ohio 43210

1979

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

Vocational education staffs in the states are making a concerted effort to make evaluation effective in stimulating program improvement. Obviously a multitude of problems surface when new activities start. As a part of the evaluation function of the National Center, technical evaluation assistance was provided to four states (California, Colorado, Maine, and Alabama). The problems addressed in this report grew out of this project supplemented by observation, consultation, and input from many other states. This report attempts to assist states in dealing with these problems by presenting alternative solutions with some related advantages and disadvantages as well as observations and recommendations on each problem.

The National Center is particularly indebted to Bill Stevenson who authored this report and to Marion Franken and Eliseo Ponce for their thoughtful reviews and suggestions. Contributions to the report were made by N. L. McCaslin, associate director, and F. L. McKinney, program director of the Evaluation and Policy Division.

Recognition and appreciation are extended to the staff of the Evaluation Division of the National Center and to the evaluation coordinators in each of the states who contributed to this report. Particular thanks are expressed to John Klit, Illinois, and Ralph Ross, Oklahoma, for their thorough and insightful review of the draft of this document. Their comments and suggestions have been carefully considered in revising this report.

A special note of appreciation is extended to Nancy Powell, secretary, for her patient and skilled assistance. Finally, appreciation is extended to the Bureau of Occupational and Adult Education, U.S. Office of Education for their support of this effort through the contract for the National Center for Research in Vocational Education.

Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

PREFACE

Communication is recognized as critical to the effective operation of an organization. State vocational leaders are seeking to improve communication in order to increase the impact of evaluation and other activities on program improvement. Following are some thoughts on communication which might be useful in increasing this essential phenomenon.

Communication

Communication thrives where there is

mutual respect,

absence of fear or jealousy,

a contribution to make,

mutual acceptance of objectives.

Communication is stimulated by

close physical proximity,

example and encouragement by leaders,

recognition and reward for effective communication.

Communication ceases when there is

fear or intense competition,

exclusive rights to information,

restriction of information by leaders,

loss of trust,

lack of mutual support,

doubt about accuracy and reliability of others.

People then become

protective of their own,

guarded with others,

unknowing and uncaring.

William W. Stevenson

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CHAPTER I

INTRODUCTION

An eminent philosopher has attempted to divide our needs and the search for solutions into three levels: predicaments, problems, and puzzles. By his definition, a predicament is said to be a situation we must get ourselves out of; a problem, a grouping of predicaments arranged for study or research; and a puzzle, games played by a few scientists with ideas having no apparent application. In light of this definition, what is presented in this report would appear to be a set of predicaments. However, in light of general usage, the areas of need will be termed problems. Several of these problems are operational or procedural, and others are content-oriented. The only criteria used in selecting these problems were that (1) they represent a situation that should be remedied or a need that must be met, and (2) the problem was found to be common to a number of states attempting to develop or improve their system of vocational education evaluation.

In no instance will all of the alternative solutions be applicable to any one state; however, this report attempts to expand the range of alternatives considered. In some instances the disadvantages presented may become advantages when the difficulties have been faced and surmounted.

This report does not provide a single solution to a problem; rather, it suggests several possible approaches a state should consider in seeking methods of improvement. In too many instances, decision-makers limit themselves more by the number and variety of alternatives considered than by their ability to adopt the best solution. When presented with a problem, our minds are inclined to automatically jump to *a* solution. We then begin the process of working out the details of implementing that single solution. As an example, when faced with the necessity to collect information from employers of vocational education completers, we instantly think, "questionnaire," and the rest of our thinking concentrates on how to develop, distribute, and retrieve the information-gathering instrument. In fact, a mailed questionnaire is not the only—and perhaps not even the best—way of getting the information we want from employers.

Another important question we should pose in seeking alternatives is "What do we want this process to tell us and for what purpose?" It is hoped that some justification beyond legislative or reporting requirements can be found to guide us in more efficiently and effectively carrying out our responsibilities. The alternatives presented in this report should be viewed not as a complete listing of all possible choices, but as a starting point for staff discussion and exploration. In studying the selected problems in this report, the reader should try to avoid the ready solution and, instead, search these pages and his/her own mind for innovative approaches to direct evaluation to more completely accomplish the mission.

CHAPTER II

PROBLEMS, ALTERNATIVE SOLUTIONS, RECOMMENDATIONS, AND OBSERVATIONS

Problem 1: To expand representation in evaluation

In too many instances, state vocational evaluation programs are planned, developed, operated, and evaluated only by individuals who have a direct interest in perpetuating the present system. This situation holds the potential for a limited viewpoint and restriction of alternatives considered. More diverse backgrounds would enable panel members to view needed changes from different perspectives and expand the list of possible alternative solutions. When individuals to participate in evaluation are being selected, inclusion of representatives of special populations enrolled in programs or in need of training should be considered. Such a panel could provide a view of programs and needs that might be quite different from the commonly expressed opinions.

Another potential trouble spot that might be alleviated by increased participation is the lack of knowledge about vocational education on the part of the general public. Involvement in any phase of the evaluation process can expose individuals outside the system to both the needs and benefits of vocational education, exposure which can only lead to stronger support for worthwhile programs. Each state should carefully examine who is evaluating with an eye to achieving the participation of a diverse group of individuals representative of a broad segment of the society.

Alternative 1: Change the makeup of teams to assure at least one outside teacher and one advisory committee member (employer) in each subject matter area. Additionally, wherever feasible, include a counselor, a nonvocational teacher, a teacher educator, an administrator, and a parent.

Advantages:

- Increased potential for seeing problems and finding viable solutions
- Better understanding of content areas and teaching methods provided by teachers and teacher educators
- Better methods of achieving student employability provided by employers
- Appreciation of the values of vocational programs acquired by participating nonvocational teachers
- Increased community understanding and support of good vocational programs
- Formation and use of advisory committees supported

Disadvantages:

- Possible change in policy required
- Limited increased cost
- Difficulty in orienting, organizing, and scheduling visiting teams

Alternative 2: Expand the number and type of individuals interviewed by the team to include at least one former student, a parent, and a counselor or other nonvocational school representative.

Advantages:

- Feedback provided to teachers on reactions of students interviewed
- Feeling of inclusion acquired by those asked to comment
- Alternative views and steps toward improvement result from diverse interviews
- A comprehensive view of program activities and services acquired by nonvocational individuals

Disadvantages:

- Additional time required for expanded interviews
- The evaluation report and recommended solutions still the work of only a limited number of individuals
- Limited community exposure to vocational education
- Increased coordination problems
- Reluctance to discuss problems with "outsiders"

Alternative 3: Include broad representation in a locally developed self-evaluation.

Advantages:

- Community representation in the evaluation process
- Increased contact between vocational educators and employers
- Strong support for recommendations

Disadvantages:

- Decisions suspect when made by vocational personnel regarding the validity of views obtained from interviews
- Contact between the evaluation team and community limited to school personnel
- Increased chance for conflict between local board and community members

Recommendations and Observations

A combination of the above and other alternatives should be considered. When the local school begins to realize the benefits of expanded participation and when fear of evaluation diminishes, the movement is likely to develop a momentum of its own. It is recommended that the state set minimums for representation on review teams and for self-evaluation involvement. The very least should be employer participation with inclusion, wherever possible, of teachers (vocational and nonvocational), parents, students, and representatives of the business community and teacher-training institutions.

Results of the implementation of one or a combination of alternatives should be assessed during the school year. To the extent possible, results should be recorded in the form of (1) number of employers, teacher educators, and teachers serving on teams; (2) number of recommendations made by these individuals included in the report; and (3) perceptions of team leaders and teachers of evaluated programs relative to the contributions of these individuals.

Problem 2: To increase the effectiveness of the supervisory (subject matter specialist's) review

Closely related to Problem 1 (involvement of diverse individuals) is the problem of evaluation by only the program supervisor, since evaluations made by the individual responsible for supervision of a program are likely to be suspect. Although the supervisor may be very knowledgeable about program weaknesses and needs, judgments about the quality of an operation when made by a person closely involved in that operation are subject to skepticism. In order to avoid putting supervisors in an untenable position, it is important that every effort be made to assure objectivity and credibility. The following alternatives represent the *minimum* effort required to broaden the base of evaluation.

Alternative 1: Involve at least one member of the local advisory committee in the program review.

Advantages:

- Minimal additional expense
- Increased understanding on the part of advisory committee members of their role in the program
- Strengthening of recommendations made for improvement
- Stimulus provided for the formation and use of advisory committees
- At least one outside view of program quality and needs provided

Disadvantages:

- Careful scheduling of supervisory visits required
- Potential for bias

Alternative 2: Provide supervisor with as much supportive data on the program as possible.

Advantages:

- Data system informed of data needs
- Student employment success record for each program provided to the supervisor
- Results of program changes observed by the supervisor
- Possibility of process/outcomes study provided

Disadvantages:

- Possible data system modifications required
- Special preparation for supervisory visit required

Alternative 3: Make basis for judging program quality as objective as possible by developing measurable standards and improved instrumentation.

Advantages:

- Decreased pressure on supervisors to point out program deficiencies
- Increased effectiveness of evaluation
- Increased credibility of evaluation
- Supervisor provided with better basis for recommendations

Disadvantage:

- Embarrassment to the local community resulting from identified program weaknesses

Recommendations and Observations

Supervisors should be provided with all applicable data available in preparation for a school visit, including long-range enrollments of regular and special populations, student and employer follow-up data, as well as conclusions of self-evaluations and response to previous recommendations.

It is recommended that at least one member from each program advisory committee be included in each program reviewed by the supervisor. This policy will present another perspective, increase credibility of the evaluation, and provide for additional involvement of the advisory committee.

Instruments used by supervisors and those assisting them should, to the extent possible, measure objective program standards in terms which avoid supervisor judgment. For example, it may be more appropriate to ask the number of visits a teacher has made to employers rather than to ask whether adequate employer contacts have been made.

This, as the total method of evaluation, at best has many limitations. States should carefully consider ways in which a more objective and creditable view of program quality (in the opinion of those outside vocational education) can be achieved.

Problem 3: To follow through on evaluation recommendations

Probably the most important function of an effective evaluation team is not to evaluate but to make recommendations for improvement. The recommendations resulting from a self-evaluation by local teachers and administrators are also very important. Schools need assistance, not only in identifying problems, but in solving them. A follow-through system on the recommendations is essential if maximum benefit is to be realized from the evaluation procedure.

Follow-through consists of several important phases on the part of different agencies. First, the state should be in a position to provide assistance in implementing recommendations. Second, the state should require that critical program improvements be made if programs are to continue. Third, there should be feedback to the evaluation coordinator on how recommendations have been dealt with. It is important that local and state staff clearly understand their areas of responsibility in this effort to help schools and programs provide better vocational education. (See following figure.)

The problem seems to stem from the fact that in many states evaluation guidelines are not clear on at least two points: (1) Who at the state level is responsible for working with local administrators and teachers to see that recommendations of the evaluation team are carried out? (2) What mechanisms are to be used to let state planners and evaluators know that recommendations have been implemented and what the results of that implementation have been? Communicating the recommendations of the evaluation team to those responsible for their implementation at both the state and local level is also a part of this problem.

A part of the solution appears to be a matter of fixing responsibility for certain phases of the evaluation function at the state level. This is a matter of determining who can do what most effectively. It is important in assigning responsibility to specify how and to whom these actions and the ensuing results shall be reported and also indicate who will act on an assignment. Lines of responsibility for action and communication must be established. These assignments should be made by someone beyond the program level (such as the state director or an assistant) in order to ensure compliance.

Alternative 1: Give staff members who serve as subject matter specialists the principal responsibility for carrying out the recommendations.

Advantages:

- Knowledge of programs and latest trends in subject matter areas provided
- Increased credibility of advice
- Contacts with other sources of assistance provided

Disadvantages:

- Possible reluctance of subject matter specialists to call upon others for assistance outside their own areas (administration, curriculum, guidance, etc.)
- Possible reluctance of individuals to criticize their colleagues and to promote change
- Preference on the part of staff members to maintain the status quo

Alternative 2: Make state administrative specialists from education department available to assist with special needs of schools.

Advantages:

- Availability of personnel trained to assist in improving administration for vocational education
- Interaction between state administrators and local schools
- Close ties between local administrators and state administrators used to advantage

Disadvantages:

- Difficulty in scheduling the activity
- Possible limited ability to communicate improved management practices

Alternative 3: Make staff working in support services for curriculum, finance, special needs, etc. available to assist with problems related to their area of expertise.

Advantages:

- Specialists available to local schools
- Assistance of these specialists formalized
- Areas of greatest need for support services work identified
- Help directed where it is most needed as indicated by evaluation recommendations
- State staff become more attuned to local needs

Disadvantages:

- Difficulties in scheduling the required time
- Possible resentment and fear on the part of teachers from what they regard as outside interference

Alternative 4: Make teacher educators aware of the needs and ask them to assist teachers with solutions to their problems.

Advantages:

- Increased understanding of local programs on the part of teacher educators
- Preservice and inservice needs of teachers identified
- Topics for research identified
- Findings of the higher education community on the solution of problems made available at the local level

Disadvantages:

- Difficulty of coping with problems not normally experienced by teacher educators
- Special provisions for teacher educators' time required

Alternative 5: Schedule state staff follow-up visit to local school to receive reports on plans for implementing recommendations and for becoming aware of state assistance needed.

Advantages:

- Consideration of the recommendations and a plan for appropriate actions promoted
- Awareness of the need for assistance by the local school made clear to state personnel
- Checklist for future review and work with school provided
- Communication between school administration and teachers and between school and state department provided

Disadvantages:

- Major effort on the part of state staff required
- Potential for tension between local school and state staff increased

Alternative 6: Have local plan and application for programs contain information on previous program recommendations and their disposition.

Advantages:

- Greater concern for improvements on part of schools promoted
- Feedback provided to evaluators
- Information provided to decision-makers on response to recommendations for program improvement
- Carefully considered recommendations and program improvement result

Disadvantages:

- Additional paper work
- Possible interpretation of plan requirements as interference

Recommendations and Observations

Because of the wide variety of recommendations that usually are made to schools and programs, a combination of all the services of support for schools should be considered. The state staff members, who are most closely in touch with local programs and who have the subject-matter expertise, should have major responsibility for assisting schools and programs in carrying out the recommendations of the evaluation team. However, since many of the recommendations fall into areas not directly related to technical subject matter, other personnel must be available to assist when called upon by the supervisor. Curriculum specialists and specialists in finance, special needs, counseling, and administration should be available to schools needing that type of assistance. In instances where problems common to many schools or teachers are identified, one of the teacher-education institutions could assist through inservice training.

The state evaluation coordinator and staff should be given responsibility for seeing that the recommendations made by the program review teams are communicated to the most appropriate department or individual. Those in charge of the evaluation system should follow through to be sure that action is taken to provide the needed assistance.

Local school administration must make certain commitments to program improvements. If both school and state staffs formally accept their mutual responsibility for making program improvements through the local application and plan, the impact of evaluation is assured.

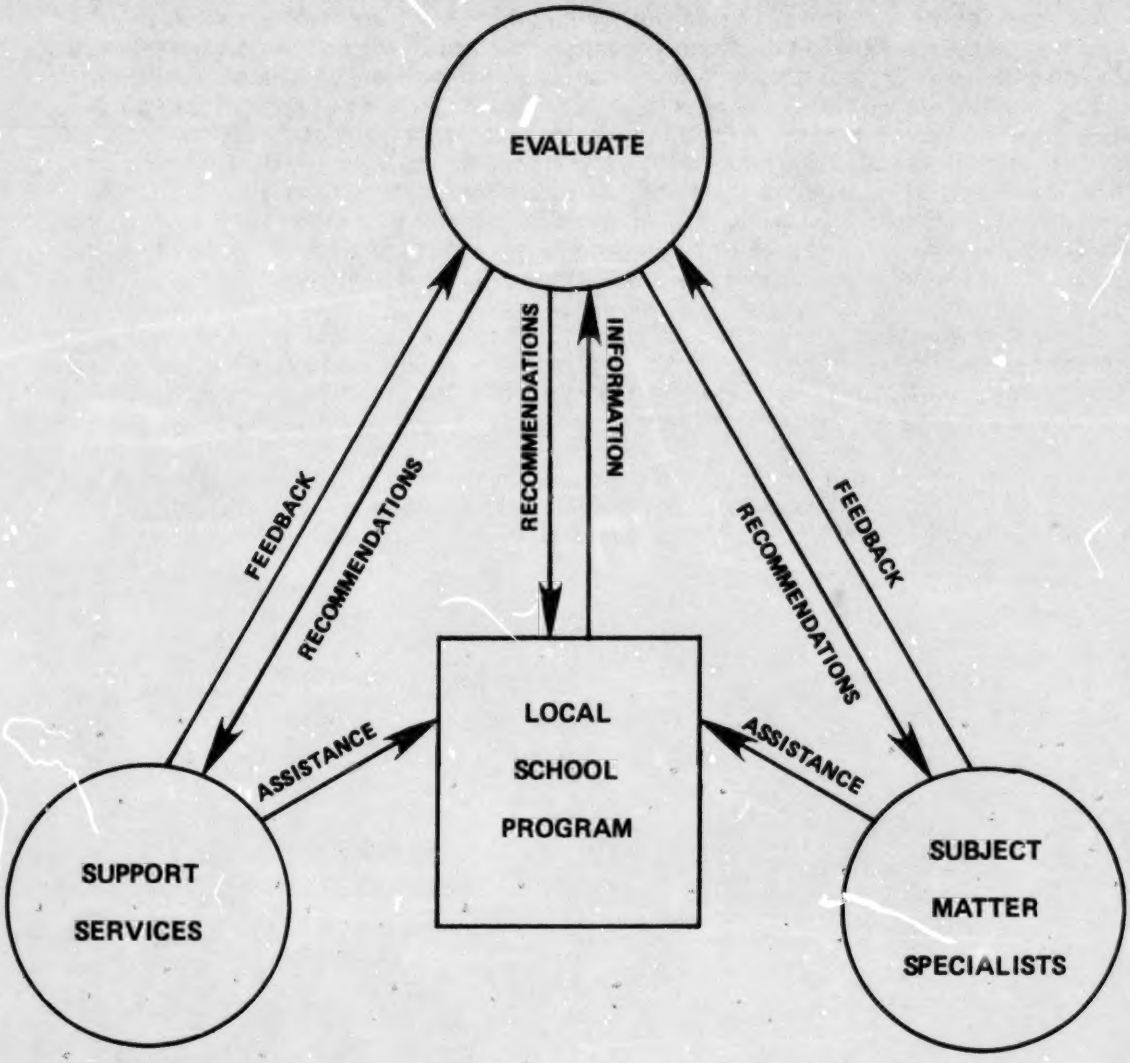

Figure 1. Evaluation information flow.

Problem 4: To assure communication of evaluation findings and results

Those directing the evaluation effort need feedback on what recommendations have been implemented and the results of the actions taken. If service to schools is to improve through the evaluation effort, the results of the recommendations made by its teams must be known. If no improvement has resulted from implementation of recommendations, then changes must be made in the evaluation teams and recommendations.

The evaluation system needs proof that it is effecting changes that result in improved vocational training for students. Like all other parts of the organization, evaluation needs evidence that it is reaching its objectives, and feedback on improvements recommended and implemented is an important part of that evidence. Local school staff and students also need to become aware of improvements made as a result of their participation in the evaluation exercise.

It is also important to know about the disposition of the recommendations and the assistance given because such feedback information can be useful in making state level decisions. By compiling statewide information, the evaluation units are in a position to recommend where expenditure of support funds may be expected to produce the best results. Administrators face many demands for funds. Information identifying the most common needs and most effective treatment will be of great assistance in addressing those requests.

Alternative 1: Give state staff working with local programs the responsibility for reporting to those who need to know (evaluation unit, planning unit, and state administration) what each program and school has done to implement each recommendation.

Advantages:

- Major responsibility for working with schools on recommendations appropriately assigned
- Follow-up and analysis of results stimulated
- Learning experiences provided for supervisory staff
- Guide to most acute school problems provided

Disadvantages:

- Lack of time on the part of supervisors to make comprehensive reports
- Difficulty of reporting across organizational-unit lines

Alternative 2: Require schools to report in each year's local plan and program application the evaluation recommendations that have been implemented.

Advantages:

- Joint work between teachers and administrators encouraged
- Increased probability that local administrators will act on recommendations
- School self-analysis encouraged
- Guide provided for determining which programs to continue, expand, or terminate

Disadvantages:

- Reluctance of schools to report failures
- Lack of agreement as to what recommendations should be implemented
- Limited resources a deterrent factor

Recommendations and Observations

Both of the alternatives have merit as means of assuring that those who need to know will be fully informed of the results of evaluation. This reporting also provides an added stimulus to schools to make the improvements recommended by visiting teams.

Figure 1 (p. 9) illustrates how the flow of assistance and information could be organized. The process involves the following steps:

1. Recommendations for program improvement flow from the evaluation system to the local school, the state subject-matter specialists (supervisors), and the support-services staff.

2. Assistance to the local school in implementation of recommendations and observations of results is provided by supervisors and support staff.

3. Feedback on recommendations implemented and results achieved is transmitted from supervisors and support staff to the evaluation unit.

If any part of this communication network fails, the entire process becomes less effective. It is the responsibility of the state administration to see that this or a similar communication process actually occurs.

Problem 5: To increase communication and cooperation between evaluation and planning and between evaluation and the management information system (MIS)

Communication within an organization does not occur automatically or by accident. This may well be the most critical and most difficult job of the administrator—stimulating communication. It is especially important that evaluation and planning make known to the MIS what information is needed and when it is needed, and it is equally important that MIS respond to these requests for information. This is also true for the request and information flow between planning and evaluation as illustrated in Figure 2. This full flow of information will avoid duplication of effort and assure that assistance and support are available at the time and in the form needed.

It must be kept in mind that organizational units do not communicate or cooperate — people do. Communication seems to thrive where there is mutual respect, where there is an absence of fear or jealousy, where each party has a contribution to make, where each acts in a supportive manner, and where there is mutual acceptance of the objectives to be reached. Beyond this, communication can be stimulated by physical arrangements that put individuals in close proximity, by example and encouragement from the leadership, and by recognition and reward for effective communication. On the other hand, where there is fear or intense competition, where exclusive rights to information are allowed and encouraged, where a lack of communication is accepted or practiced by top administration, where trust is lost, where individuals are not mutually supportive and contributive, and where doubts exist as to the accuracy or reliability of parts of the organization, people become protective and communication ceases.

Alternative 1: Allow the informal process to work under the encouragement and support of the state administration.

Advantages:

- Relaxed atmosphere and lack of threat predominant
- Enthusiasm for the working process increased

Disadvantages:

- Lack of communication not always obvious to the administration
- Possibility of inadvertent failure to communicate needed information
- Possibility of information flow in one direction only

Alternative 2: Have the state administration set very formal timelines and strict responsibility for communication and response. This alternative is illustrated in Figure 2.

Advantages:

- Some communication between parties assured
- Administration assured of information exchange
- Available record of requests made and responses given

Disadvantages:

- Possibility of stress and resentment on part of staff
- Only minimal communication, that which satisfies requirements, may be achieved

Alternative 3: Conduct an organizational rearrangement in which these responsibilities are placed under one administrative head.

Advantages:

- Responsibility fixed for seeing that communication is effective
- Communication unhindered by organizational lines

Disadvantages:

- Move within organization usually unpopular with those affected
- Reorganization ineffective in assuring communication

Recommendations and Observations

The third alternative is not acceptable to many staff members within the vocational organization. The informal process (Alternative 1) should be tried first with strong encouragement from administration. If this is not effective, the formal means of communicating should be initiated.

Results of the informal phase may be measured by investigating the extent to which the information system is aware of the needs and time-lines of evaluation and the extent to which those needs are met. The relations between evaluation and planning can be judged in the same way. If it is determined that needs are not known or are not being met, Alternative 2 should be initiated.

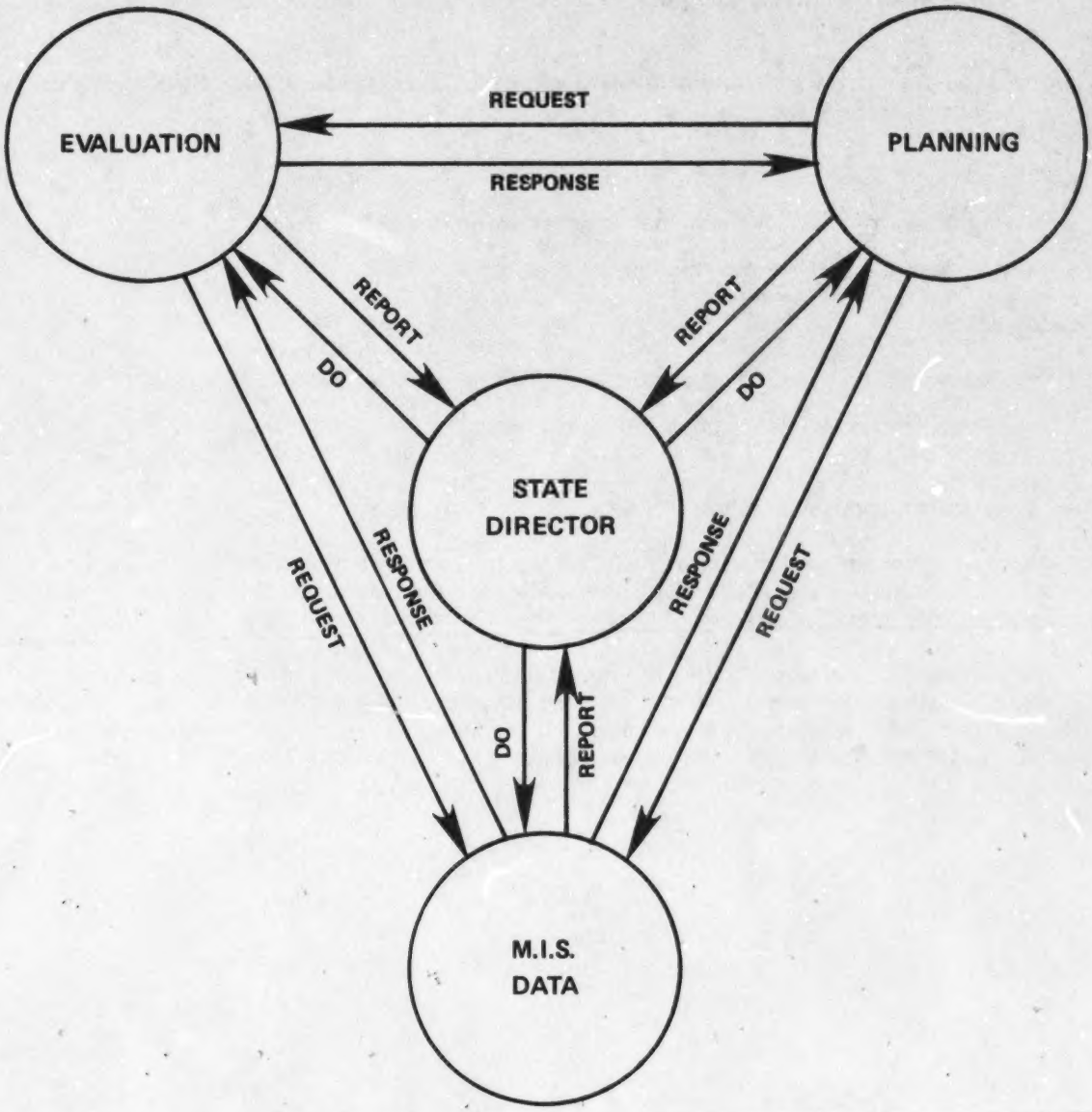

Figure 2. Information flow — state vocational department.

Problem 6: To evaluate services and programs for special populations

How can the state evaluation system provide leaders (state and federal) with information on how effectively the special needs of various individuals are being met—the needs of women, minority groups, the disadvantaged, the handicapped, and those with only limited ability to use the English language? There is need for special services designed to enable such individuals to succeed in a regular vocational program. Every state faces the problem of (1) identifying individuals who have special needs, (2) determining what needs they have, (3) planning programs or services to meet those needs, and (4) determining the effectiveness of designed programs.

Four major elements of this problem that evaluation units, with the assistance of others, must study are access, participation, process, and outcomes. (See matrix p. 23.) It must be learned to what extent educational, social, and physical barriers have been eliminated and the extent of the resultant participation of special populations in vocational programs. Evaluation units must be aware of the special services being provided to assist the individuals in being successful. How effective the special activities have been in reaching the outcome objectives set for all students must also be determined.

For practical purposes it seems essential to integrate the special-needs evaluation system into the regular ongoing process of evaluation. Because of the limited resources available for evaluation, in terms of both dollars and staff time, a separate evaluation system for these groups simply is not feasible. The alternatives presented below provide some ideas for accomplishing effective evaluation of programs provided for special, as well as regular, students.

Alternative 1: The individual student accounting system should be able to identify individuals in special categories upon enrollment, follow them through the educational process, and determine the outcomes of that process.

Advantages:

- Identification of special population individuals by the general data-collecting system
- Avoidance of duplication
- Useful information provided for other functions (administration, planning, reporting, etc.)

Disadvantages:

- Need for close working relationship between evaluation and the information system
- Expenses of individual student accounting system

Alternative 2: Local applications for special funds require a very specific description of the additional services to be provided in order to enable individuals of special populations to participate in programs successfully.

Advantages:

- Clear identification of services provided

- Provision for information check during team and staff visits
- School personnel encouraged to think in terms of special assistance to individuals with special needs
- Realistic accountability

Disadvantages:

- Special training of local teachers and administrators required
- Difficulty in achieving a close working relationship with all personnel involved: the special needs unit, the evaluation unit, and those who approve expenditures for special funds

Alternative 3: Program review, by staff and/or team, should provide information on the special services actually being provided by the program and school and, where appropriate, some estimate of the effectiveness of these services. Efforts at recruitment and barrier removal should also be a part of program review.

Advantages:

- Information from program application verified and supplemented
- Knowledge of services and results acquired by team members
- Services and results observed and reported
- Schools encouraged to expand and improve special services

Disadvantages:

- Evaluation team's work expanded
- Need for representation of special-needs groups on evaluation team

Alternative 4: Data and information should be analyzed in order to tell the state –

a. the extent to which special populations are being served;

b. what supplemental or additional services are being provided;

c. the comparative success of programs in producing desirable outcomes; and

d. the relationship between services provided and outcomes.

Advantages:

- Assistance in making state decisions provided
- Guides to most effective services for certain needs provided
- Awareness of compliance or noncompliance with the law created

Disadvantage:

- Additional effort required

Recommendations and Observations

One source of assistance and expertise available to the state vocational education department is the special education section in the education department. The relationship with this section needs to be strengthened through a conscious effort to communicate and cooperate. Evaluation should determine not only how well special needs individuals are being served at the local level but also how effectively all sources of support are being combined to solve the problems at the state level.

Each state should review its present evaluation system for the purpose of identifying the gaps which must be filled if an effective evaluation for special populations is to result. Can the information system show the level of participation of special populations? Does the program review instrument lead the team or supervisor to determine efforts to increase program accessibility and to provide special services? Can the outcome for these special populations be accessed through the follow-up or some other process?

Effective evaluation of special needs programs continues to be a major problem for vocational educators and evaluators. The present evaluation system can be the solution, provided the system has enough flexibility to respond to special needs. The matrix displayed on the next page gives an overview of the four major elements (access, process, participation, and outcomes) that must be measured if a state is to be able to determine its effectiveness in serving individuals in special groups.

Cause	Effectiveness	Show

ACCESS

1.0 Facility Factors
- 1.1 Architecture and Equipment
- 1.2 Site Location (non-discriminatory)
- 1.3 Site Selection (non-discriminatory)
- 1.4 Modification of Physical Plant
- 1.5 Comparable Facilities
- 1.6 Housing Opportunities
- 1.7 Topographical Factors

2.0 Educational Factors
- 2.1 Recruitment
- 2.2 Admission Criteria
- 2.3 Program Offerings
- 2.4 Attitudinal Barriers

3.0 Societal Factors
- 3.1 Attitudinal Barriers
- 3.2 Behavioral Barriers
- 3.3 Economic Barriers

PARTICIPATION

1.0 Enrollments
- 1.1 Disadvantaged
- 1.2 Handicapped
- 1.3 Minorities
- 1.4 Limited English-Speaking
- 1.5 Sex Designation
- 1.6 Age (elderly)
- 1.7 Instructional Setting

PROCESS

1.0 "Additional Services"
- 1.1 Administration Related
- 1.2 Guidance and Counseling Related
- 1.3 Instruction Related
- 1.4 Placement Related

OUTCOMES

1.0 Student Achievement
- 1.1 Skills
- 1.2 Acquisitions in the Affective Domain

2.0 Successful Program Completion
- 2.1 Grades 11 and 12
- 2.2 Postsecondary
- 2.3 Adult
- 2.4 Apprenticeship

3.0 Successful Placement
- 3.1 Employed
- 3.2 Unemployed
- 3.3 Pursuing Additional Education
- 3.4 Status Unknown

4.0 Successful Employment Over Time
- 4.1 Duration
- 4.2 Promotions
- 4.3 Salary Increases
- 4.4 Reaction to Training

Figure 3. Evaluation of programs and services for special populations

Problem 7: To provide evaluation services when only limited resources are available

A question uppermost in the minds of evaluation staff and administration is how the state can provide evaluation services that will meet the needs and the requirements of the legislation. When resources are limited, an alternative means of reviewing all state programs must be sought.

Though the evaluation process is viewed by legislators, administrators, and the public as holding great potential for program renovation and improvement, evaluators and teachers probably see the potential of evaluation in a more realistic light. Outcomes expected of an evaluation system are to provide the following:

1. Stimulus for local program improvement
2. Accountability information
3. A guide for allocation of resources
4. A guide for determining needs of programs
5. Assistance in setting objectives for programs which meet the needs of students, employers, and society
6. A guide for determining accessibility of programs
7. A guide for determining effectiveness of programs for regular and special students
8. An indication of compliance or non-compliance with federal and state legislation
9. An identification of teacher inservice needs
10. Information on training needs of administrators
11. Feedback to teacher educators
12. A guide for curriculum revision
13. Identification of support services needed
14. Information on placement and demand for vocational education graduates
15. Support for teacher or administrator recommendations
16. Motivation for teachers to improve
17. A guide to program termination or revision
18. Justification of funds spent
19. A guide to identification of research needs

The Education Amendments of 1976 specify that all vocational programs must be evaluated over a five-year period of time. The law also gives the criteria upon which that evaluation shall be based.

The disproportionate allocation of expectations and resources creates an absolute necessity for efficiency and innovation in seeking alternative ways of meeting objectives.

Alternative 1: Divert resources from other uses to evaluation.

Advantages:

- Strengthened evaluation effort
- A demonstration of state interest in evaluation and consequent program improvement
- State needs and federal evaluation requirements met

Disadvantages:

- Weakening of other activities of the department
- Possible resentment toward evaluation
- Uncertainty of immediate evaluation provided to programs with greatest needs

Alternative 2: Use a random sample of programs and teachers in order to project to the total population.

Advantages:

- Equal opportunity for all programs to be evaluated
- Money and time saved

Disadvantages:

- Possibility that programs with greatest need would not be evaluated first
- Possibility that programs with least need would be evaluated first
- Reflection of only the average rather than the specific needs of programs

Alternative 3: Evaluate on the basis of outcome data, and provide team visits for programs needing help most.

Advantages:

- Evaluation provided to those programs needing it most
- Requirements of federal legislation satisfied
- Possible reduction of effort needed to evaluate and to assist in program improvement

Disadvantages:

- Necessity to rethink, reorganize, and reschedule the evaluation effort
- Lack of coverage for all programs within the five-year cycle
- Need for an effective data system imperative

Alternative 4: Allow local schools to conduct their own outside evaluation with guidelines and assistance from the state.

Advantages:

- Reduction of requirements on state staff and budget
- Increased local interest derived from increased local school responsibility
- Increased impact on local school

Disadvantages:

- Need for the training and assistance of local administrators and staff
- Potential for "buddy" system to develop between schools
- Resistance of schools needing evaluation most to participate in evaluation

Recommendations and Observations

Alternative 1, diverting resources from other uses, holds little promise of implementation in most states. Alternative 2, sampling, would provide some state-wide information, but would do very little in providing guides for program improvement except in those areas visited.

Another view should be taken of evaluation in relation to the law as outlined in Alternative 3. If evaluation means determining the extent to which programs have reached certain student-outcome objectives, then the process becomes a matter of collecting the kinds of data that will allow this determination to be made. If the state staff, working with local vocational educators and others, can specify acceptable levels of outcomes for programs, the data can be accumulated to determine which programs are effective and which are not. This also requires acceptance of the fact that so-called "evaluation teams" do not actually evaluate but rather perform the very important function of recommending what programs should do to improve (i.e., better meet the established outcome objectives).

With these two concepts accepted, it is possible for the state, through its data analysis, to identify those programs that need to be evaluated. The programs with the poorest performance record, although they may comprise only 20 percent of total programs, are the ones most in need of assistance.

Those programs performing successfully (meeting outcome objectives) do not need team reviewers, at least not so much as other programs. By this alternative, the number of programs to be reviewed by a team visit would be reduced, with those programs needing assistance most being helped first. This system also appears to comply with requirements of the law that programs be evaluated every five years. As a matter of fact, with the data system providing information to the evaluation unit, evaluation of every program every year is possible.

The effort can be further reduced if review teams are asked to review only those processes affecting the outcomes found to be low. For example, if the percentage of completers available for placement has been identified as an important outcome, it may be important to look at the student selection and counseling process rather than at the quality of instruction. On the other hand, if the

data show a low rate of success in placement on jobs, the quality of instruction would be a very important part of the process to review. Fully developed, this system could greatly reduce the number of programs to be reviewed and decrease the area of process to be studied.

Allowing schools to conduct their own evaluations may have merit in some instances. This would not be self-evaluation but rather a fully acceptable outside assessment of effectiveness with the state providing guidelines and instrumentation to assure uniformity and assisting in other ways as needed.

Experimentation with these and other approaches should be tried by various states with results reported to the total evaluation community.

Problem 8: To evaluate the state vocational delivery system

All states are engaged in some type of evaluation of local programs. This assessment consists mainly of answering the question, "Are we doing things right?" Few states are concentrating on evaluation of the state program of vocational education and attempting to determine "Are we doing the right things?" The accountability report specified by the Congress, at least to some extent, asks this latter question of the states.

Each state must ask itself these difficult questions:

1. To what extent are we meeting the manpower needs of the states?
2. Are programs accessible to all who can profit from training?
3. Are we providing training for the occupations most critically needed?
4. Are we providing training for occupations with adequate remuneration for training and desirable expectations of advancement?
5. Is there a reasonable expectation of employment for *every* student enrolled in vocational training?
6. Do our programs provide opportunities for retraining and upgrading?

These and many other questions make up the score sheet against which state programs are being judged. However, a mere summation of the evaluations of local programs will not provide a sufficient estimate of the effectiveness of vocational education in the state. Alternatives as illustrated below must be explored to identify areas of needed improvement in the state program.

Alternative 1: State use the accountability report to judge its effectiveness.

Advantages:

- Whether or not the state has carried out its projected program determined
- Requirements of federal legislation complied with
- Accountability at both state and federal level provided

Disadvantages:

- No assurance that what was done was what should have been done
- Emphasis on fiscal matters and processes rather than on outcomes

Alternative 2: State develops, by whatever means appropriate, a series of student outcome objectives to be answered by statistical data.

Advantages:

- Outcomes rather than processes emphasized
- A guide provided for data collection and analysis
- Effort and support for achieving objectives consolidated

Disadvantages:

- Changes in the data system required
- Reluctance of the state to be accountable for student outcome objectives
- Overly selective admission policies possible

Alternative 3: Depend upon the State Advisory Council for Vocational Education (SACVE) to evaluate the state program.

Advantages:

- Requirements of federal legislation complied with
- Involvement of many individuals outside education achieved
- State encouraged to identify and work toward specific measurable objectives

Disadvantages:

- Insufficient knowledge of vocational education on the part of some Advisory Council members
- Possible bias on the part of individual members of SACVE
- SACVE members not trained in evaluation

Alternative 4: Bring in experts from outside the state to evaluate the state vocational program.

Advantages:

- People who are knowledgeable in the area of vocational education utilized
- Credibility of evaluation assured
- Outside-state experience available

Disadvantages:

- Costly in terms of money and time
- Inappropriate recommendations created by differences between states
- Possible need for training visiting teams

Alternative 5: Determine the needs of the state and its vocational education role through survey, questionnaire, conference, committee, etc., with evaluation based on needs met.

Advantages:

- Direction for vocational education provided
- Evidence of the contribution of vocational education to the state provided
- Many other people involved in setting priorities

Disadvantages:

- Unrealistic expectations of vocational education held by many people
- Extensive investigation and data collection required

Recommendations and Observations

States should consider the formation of a consortium of states including vocational staff and SACVE members to do the following:

1. Develop questions to be answered
2. Identify methods of obtaining data needed to answer questions
3. Exchange personnel to review operations at the state level and to make recommendations

Alternative 5, determining state needs through surveys, could be expanded to include an on-site visit by clients served (local educators and administrators). This, in combination with self-evaluation by the state staff, could provide useful insights into needed changes.

States have a variety of evaluative information upon which to base decisions. A systematic approach to planning and evaluation that organizes the input from SACVE, the Office of Education MERC-Q reviews, accountability reports, state evaluation reviews, and reviews of local programs can form the basis for long-range improvement of the state vocational delivery system.

Problem 9: To systematize all evaluation efforts

Many states have parts of an evaluation system that are operating efficiently, but the effectiveness of evaluation is, in many cases, limited because the parts operate in isolation—dependent on, yet almost unaware of, what other divisions of the department are doing in evaluation.

This absence of a system that would focus each of the separate parts into an organized effort can produce very detrimental results: duplication, confusion, and conflict. The purpose of varied input into evaluation is to present different views of how programs should perform and how they can be improved, advantages that may be lost if local educators become confused or perceive different evaluators as giving opposing recommendations.

These adverse effects, however, can be avoided by a systematic approach that organizes effort so that everyone is aware of the role and responsibility of each part. Each of the entities is best suited to specific parts of the evaluation effort—data collection, program review, technical assistance, etc. Suggestions as to how a state should proceed to develop guidelines that specify role and responsibility and outline arrangements for fitting the parts together are made in the following alternatives.

Alternative 1: Call a conference of representatives of all groups involved in evaluation to clarify roles and responsibilities.

Advantages:

- The role and responsibility of each group made clear
- Increasing efficiency and impact produced by joint input
- Improved morale of staff involved in evaluation

Disadvantages:

- Systematic approach still not ensured
- Administrative decisions still required to settle differences

Alternative 2: Form an oversight committee to direct and monitor activities through the evaluation coordinator.

Advantages:

- Problem viewed objectively
- Responsibility for decisions placed outside the realm of the affected parties
- Changes made possible without concern for "turfmanship"

Disadvantages:

- Possibility of slow decisions resulting in delayed action
- Possibility of excessive time spent in reporting to the committee
- A systematic direction to evaluation not guaranteed

Alternative 3: Use a systems expert (internal or external) to design a system.

Advantages:

- Basis for a system created
- Impact of evaluation increased
- Roles and responsibilities clarified
- Decision reached objectively

Disadvantages:

- Dissatisfaction with the decision on the part of some individuals
- Multiple problems created if wrong individual is selected to design the system

Alternative 4: Make sure that there is uniformity of instruments and evaluation guides and that each individual or group thoroughly understands its assigned role.

Advantages:

- Increased stabilization of procedures and outcomes
- Improved communication between individuals and groups
- Reduction of duplication and misunderstanding

Disadvantages:

- Additional staff time required
- Reluctance of some individuals to see their role differently and to change

Recommendations and Observations

Installing a system is difficult to do in a piecemeal way, and to be effective its implementation must go "all the way." There are steps, however, that can facilitate the accomplishment of this objective. A person who understands systems is essential. This person, working with a group of individuals involved in all phases of evaluation under the leadership of the coordinator of evaluation, should design the basic system, deciding who should do what. After administrative review, a workshop should be scheduled for all individuals who are interested and involved to suggest and discuss revisions. With revisions complete, the final report on the system can be made and training initiated to implement the system.

Problem 10: To acquire employer follow-up data

It is important that decision makers (at state and local levels) and teachers know how employers view the training acquired by recent vocational completers. Employer viewpoint, along with a number of other inputs, provides valuable information as to how well programs are accomplishing student outcome objectives and what changes need to be made in programs.

This information may be difficult to obtain if employers, considering it an infringement on their time, refuse to respond. Also, there may be concern for the confidentiality of this information in the minds of employers. In larger businesses, the inquiry may go to a person with no knowledge of the employee. Another factor is the considerable expense of collecting adequate and reliable data.

In spite of these difficulties, it is important that ways to gather this information be explored. First, the Education Amendments of 1976 mandate that employer reaction to training be used in evaluating programs. Second, this information is valuable in accomplishing program improvement. Third, it may be valuable in convincing others of the value of vocational education. Fourth, this survey can be a factor in strengthening relationships between vocational education and the business community.

Two major decisions must be made by those charged with responsibility for collecting information from employers: (1) the best method for securing the initial and continuing cooperation of employers and (2) the selection of the best system to ensure the right to privacy.

With employer reaction to training a part of evaluation, it may be that employers of students from a particular school or program would need to be surveyed only every fifth year.

Problem 10A: To secure continuing cooperation of employers

Since employer perceptions of the quality of training are to be a continuing part of the state evaluation system, a method must be devised that will assure an acceptable level of response over a number of years. A few states have received up to 75 percent response from employers. Whether or not this level of response can be maintained remains to be seen.

In observing a number of employer follow-up efforts, the author has observed certain steps that should be considered in establishing an employer follow-up:

1. Include only questions needed to obtain essential information.
2. Personalize the contact: ask a certain employer about a certain employee.
3. Explain how information will be used for the employer's benefit.
4. Involve employers in planning a procedure.
5. Allay confidentiality fears.
6. Obtain support of employer groups.

Alternative Information-Collection Procedures

Alternative 1: Mail survey instruments.

Advantages:

- Method of administration easy and relatively inexpensive
- Analysis of response easy
- Little trouble imposed on employers
- Evidence given that vocational educators are attempting to meet the needs of employers

Disadvantages:

- Little personal involvement of educator and employer provided
- Possible doubt that the inquiry gets to the person most knowledgeable about the former students' work
- Possible resentment of the inquiry on the part of the employer
- Misunderstanding of question or response possible

Alternative 2: Have teacher or student interview employer personally.

Advantages:

- Personal involvement of teacher or student with employers made possible
- Educational experience provided for students
- Direct feedback to teachers made possible
- In-depth information obtained

Disadvantages:

- Many additional hours required
- Difficulty of analyzing data gathered
- Confidentiality questions raised and rights to privacy possibly violated
- Another individual bias element added

Alternative 3: Secure cooperation of employer organization such as the Chamber of Commerce.

Advantages:

- Increased interest and support of vocational education on the part of employer organizations

- Probable increase in employer response
- Increased interaction between educators and employers

Disadvantages:

- Possible difficulty in obtaining cooperation of employer organization
- Improbability of securing information unless employer holds membership in the particular employer organization

Alternative 4: Conduct a telephone interview.

Advantages:

- Response numbers increased
- Minimum amount of employer's time required
- Greater insight into response gained than that obtained from a written instrument

Disadvantages:

- Difficulty of contacting person with most information about employee
- Difficulty of securing the employer's confidence
- Trained interviewer and standardized questions required

Recommendations and Observations

When a follow-up of students is conducted, it is important to obtain the correct name and address of the company where they are employed as well as the name of the person most knowledgeable about their work, usually an immediate supervisor. Contacting this person should insure an informed response if a response is received.

In determining the best method for securing information, a state should fully explore each of the alternative methods mentioned here and any others which may be presented. The person responsible for conducting the employer follow-up should first obtain the input of a few employers to help in determining methods and procedures. It is important that various ways of successfully carrying out this task be explored and that the methods be shared among the states.

Problem 10B: To assure the confidentiality of employer follow-up

The state is asked to obtain perceptions of employers on the comparative quality of performance by recent participants in vocational training. Employers will be asked to make judgments relative to the employee's technical knowledge, work attitude, work quality, and overall training. If this is perceived as an invasion of privacy by either the employer or the employee, the response rate may be drastically affected. The Vocational Education Data System has proposed that the employee be identified to the employer and that the identification be removed before the response is returned.

An alternative is to explain to the former student in the follow-up instrument that the state wants to contact the employer and to ask for the student's permission. States have received up to 80 percent approval of the students responding.

Alternative 1: Use the VEDS "tear off" method.

Advantages:

- Federal requirements complied with
- Analysis possible relative to program, school, and type student
- Permission of student not required

Disadvantages:

- Determination of which individual has responded impossible
- Anonymity impossible if employer fails to remove identification
- Confidentiality not maintained if information is collected on one employee from one employer
- Possible feeling of insecurity on the part of employers

Alternative 2: Request former student's permission to contact employer.

Advantages:

- Employer acceptance increased
- Former students informed of the state's intentions
- Questions of confidentiality satisfied

Disadvantages:

- Possibility of reduction in student response rate
- Little likelihood that employees with problems will grant permission to contact employers
- Other approaches eliminated if the student refuses permission to contact employer

Recommendations and Observations

Those working in the public sector have become very conscious of privacy laws, and employers are no exception. If they even suspect the possibility of exposing themselves or their company to charges of violating the privacy rights of their employees, they will not respond.

Any procedure adopted should have a legal review before implementation. The alternatives suggested deal only with a written instrument procedure. How the personal interview with employers may affect confidentiality should be thoroughly investigated before this method is adopted.

Problem 11: To increase the effective use of evaluation information

This problem encompasses the total evaluation system and needs to be treated as a whole rather than as separate parts if continuity is to be established.

The types of evaluation information that may be available in most state systems are as follows:

1. Student follow-up
   a. Information relative to employment, non-employment, and further schooling
   b. Student reaction to training as it compares with the work situation
2. Employer follow-up
   a. Level of satisfaction with performance of former vocational students
   b. Comparison of former vocational student with recent non-vocational employees on several specific attributes
3. Additional data
   a. Facilities – size and condition
   b. Equipment – type and quality
   c. Personnel – experience and education
   d. Expenditures – by program and by student
4. Results of self-evaluation by local school and programs
5. Recommendations of visiting teams for improvement

The use made of this information is the real determinant of the benefits of an evaluation system. Evaluation data and information properly used can significantly affect the decisions made at both the state and local level.

This problem actually encompasses both the use to be made of the information and the form and procedures to be used in presenting the evaluation findings. Alternatives will be considered for three questions related to the overall problem: (1) how the information may be analyzed and packaged for use by local schools or programs; (2) the kinds of decisions evaluation information may be used for; and (3) increasing the use of evaluation information in planning.

Problem 11A: To analyze and package data for use by the local school or program

Alternative 1: Send each program and school data on its own students and programs with no comparisons.

Advantages:

- Avoidance of unfavorable comparison between schools and programs
- Less threat to teachers and administrators
- Minimum data handling
- Comparisons made on the basis of school or program performance on yearly basis

Disadvantage:

- No opportunity for schools and programs to compare their results with those of other schools

Alternative 2: Send each program and school data on its own students and programs with averaged state data for comparison.

Advantages:

- Comparison points provided
- No identification made except that of self-identification to individual's school and program

Disadvantages:

- Some additional data analysis required
- Possibility of state averages being deceiving as a basis for comparisons because of differences in basic school structure

Alterrative 3: Send each program and school data on its own students with averages for programs in similar situations.

Advantages:

- Equitable basis for comparison provided
- Relation between ability to pay and program quality possibly revealed
- Level of administrative support indicated

Disadvantages:

- Extensive data treatment required
- Difficulty in determining similarity of situations

Alternative 4: Calculate a "product index" or "outcome index" that combines results of attainment of several selected outcomes into one figure for each program or each school.

Advantages:

- One figure expressing program impact provided
- Important outcomes identified
- Emphasis placed on outcomes rather than processes

Disadvantages:

- Extensive data manipulation required
- Disagreement as to which outcomes are most important
- Inappropriate analysis for programs having different or unique outcome objectives

Alternative 5: Establish outcome objectives expected of each program and school and check data against these established standards.

Advantages:

- Indication provided to teachers, students, parents, and community of what vocational education is attempting to achieve
- Program weaknesses and areas needing assistance indicated
- Comparisons mentioned in other alternatives possible with this analysis
- System applicable to different types of programs

Disadvantages:

- Disagreement on outcomes likely
- Possibility of required changes in data collection and analysis methods

Recommendations and Observations

States should provide local schools and programs with all available data while continually considering how the amount, quality, and usefulness of the information can be increased. Eventually, states should consider Alternative 4 or 5 as a method of further analyzing student accounting and program data. The calculation of an outcome index (Alternative 4) involves the reaching of a consensus as to desirable outcomes, the assignment of a weight to each outcome, and the development of a formula and computer program to perform the calculation. This reduces all the expected important outcomes to one figure and is a method of indicating the relative effectiveness of programs in achieving those outcomes considered important.

Alternative 5 would be the measuring of a program or school performance against previously established outcome objectives. It is important that these objectives be stated in terms of measurable outcomes rather than processes or procedures. These objectives may be set by program and by school, or statewide by program. The procedures followed in setting objectives would be a state decision, but certainly the involvement of those affected, including local educators, would be essential. Such a system would also serve as a guide in program review.

Problem 11B: To use evaluation information

The following are the major uses at the state level:

1. To facilitate decisions relating to expansion, continuation, or termination of programs
2. To serve as a guide for state subject-matter specialists in effecting school/program improvement
3. To serve as a guide in determining fund allocation for supplemental services
4. To indicate inservice and preservice education needs
5. To indicate the impact of vocational education
6. To determine the effectiveness of state vocational delivery systems
7. To determine the effectiveness of services for special needs groups

The following are the major uses at the local level:

1. To indicate changes needed in school and program
2. To indicate the impact of vocational education
3. To assist in decisions on fund allocation
4. To identify programs needing special assistance
5. To assess effectiveness in meeting the needs of special population individuals

Obviously, both local and state decision makers should be using the results of evaluations as an input for managing vocational education programs. Too often, however, these results are not used, partially because the manager is unaware of the potential benefits of this procedure and partially because evaluation findings are not packaged in the most usable form. If decision makers and evaluators are made aware of the possible uses, both parties can direct their efforts toward the timeliness and usefulness of evaluation results and reports. It is also important to realize that input from many sources other than evaluation results should be used in decision-making.

Problem 11C: To increase the use of evaluation information and data in planning

Data from the Management Information System (MIS) and information from evaluation can be important inputs for state planning. Because state administrators and planners make many decisions on program implementation, expansion, and termination, it is important that these individuals have all relevant information available and that they use it in making these decisions.

There may be several reasons why information or data are not used in making decisions:

1. Decision makers (planners) may not know the information is available.
2. The data and information may not be in the form that the planner needs.
3. The planner may not have confidence in the data.
4. The planner may not know how to use the data or information.
5. The information may not be available when the planner needs it.

Most of these reasons for not using evaluation information and data focus on lack of communication. How this communication can be increased is a problem that should be of concern to all state administrators and staff members. Communication and cooperation between MIS and planning seem to be well-established in most states. Concern about the flow of information between evaluators and planners appears justified. Some actions that may help to alleviate this problem are outlined below.

1. Evaluation specialists should make known to planners the information which they can provide.
2. Planners should specify to evaluation staff the content, form, and time information is needed.
3. Administrators should insist that information is requested and provided.
4. Planners should be required to specify how evaluation information is used in planning.

One of the major functions of planning is the allocation of resources. Evaluation determines productivity, quality, and needs. Considering these two facts indicates that evaluation can assist in determining the effectiveness of past expenditures (productivity and quality) and future allocation of funds (needs).

The preface of this report gives further clues as to how communication can be stimulated in an organization.

Problem 12: To measure student achievement

The 1976 Education Amendments mandate that student achievement be used as one of the criteria in evaluating vocational education programs. A survey of state evaluation coordinators identified the measurement of student achievement as one of the four major problems common to the states. State directors of vocational education, when surveyed during a national conference in September, 1978, ranked this problem in the upper quartile of evaluation problems in the states.

The whole field of competency teaching, testing, and reporting would appear to be well suited to vocational education. Certainly, if we know specifically what it is we want students to learn, and if we construct ways of measuring and reporting this learning, we have a reasonable method of evaluating programs.

Curriculum materials are being developed that concentrate on teaching and testing the competency attainment of students. Many schools in several states are moving in the direction of more specific determination of student learning. The reporting and accumulation of this information for use in evaluating programs is an area needing development.

Alternative 1: Use competency testing and reporting of student achievement at school/program level (use of competency-based curriculum).

Advantages:

- Testing, when performed by the local school, simplified
- Information available for designing program changes to meet local needs
- Measures of the effectiveness of programs provided
- Valid and reliable tests being developed

Disadvantages:

- Possible differences in competency requirements between schools even in same program areas
- Possible limited view of competency requirements within an occupation on the part of teachers unless employers involved
- Possible "teaching to test"
- Valid and reliable tests nonexistent in some instructional areas
- Extensive inservice training to ensure the reliability and validity of competency testing required
- Lack of uniformity of curricula

Alternative 2: Use statewide competency testing and recording of student achievement.

Advantages:

- Uniformity across the state assured
- Schools/programs made aware of what is expected as outcomes
- Teachers made aware of competencies expected of trainees
- An additional criterion for determining program effectiveness provided

Disadvantages:

- A major effort on the part of the state required
- Nonexistence of proven competency tests in most subject matter areas
- Threat to local school autonomy
- Possible danger of judging teachers solely on pupil performance
- Problem of keeping tests updated

Alternative 3: Base student achievement on success on the job: assume students successfully employed achieve learning expected.

Advantages:

- Some of the information needed for this procedure provided by student and teacher follow-up
- Schools encouraged to emphasize importance of student follow-up
- Provides reason for the state to expand follow-up beyond the first year

Disadvantages:

- Time required to measure job success
- Not applicable to students who do not become employed
- Difficulty in judging effects of outside influences on employment

Alternative 4: Have students rated by skilled individuals from outside the school.

Advantages:

- Greater community involvement in the vocational program
- Valuable experience provided for students
- Stimulus and aid to employment provided

Disadvantages:

- Difficulty of maintaining uniformity
- A major effort on the part of the state and local schools required
- Possible reluctance of programs to accept poorer students

Recommendations and Observations

Obviously, whichever alternative is chosen, a major effort will be required. This is a long-range objective requiring from the state a considerable amount of time and resources over a period of several years. The National Occupational Competency Testing Institute (NOCTI) is presently in the process of testing and modifying their testing materials to be appropriate for use with students. Those working on methods of measuring student achievement should be alert to the NOCTI and other testing programs under development.

States should begin to test alternatives. Validation of curriculum materials is a complex and time-consuming activity. If agreement can be reached on competencies required for successful employment, then curricula can be constructed based on these competencies, and tests can be prepared and provided to determine the level of achievement of individual students. The curriculum labs in vocational education are a starting place for recording student achievement. If tests do, in fact, measure competency, and if curriculum materials are valid, this procedure should give reliable information upon which to begin to build baseline data on how well students are mastering the competencies needed for employment.

Assistance in measuring student achievement will be provided by a National Center publication planned for 1980 entitled "Performance Testing: Issues Facing Vocational Education." This report will consider the legal, philosophical, technical, and implementation factors of performance testing and the implications for vocational education.

There may be many other areas of student achievement in addition to job competency that a state or local school may wish to measure. A project of the National Center, "Examining Vocational Education Outcomes and Their Correlates," has identified several possible areas, including the skill of communication and numerical calculation, consumer and other self-help skills, and world of work knowledge. Currently, project staff members are developing procedures for measuring some of these outcomes.

Problem 13: To determine the effectiveness of the evaluation system

State administrators and evaluators at both the secondary and postsecondary levels have an interest in assessing the effectiveness of their evaluation system. Concern has been expressed for the collection of information on (1) the extent to which the present system meets the federal requirements, (2) the extent to which the present system is meeting state and local needs for program improvement and administration, and (3) methods of improvement.

Those in administration and those in evaluation seem genuinely interested in improving the evaluation system, and the requests for an assessment appear to stem from that interest. Administrators are understandably anxious about compliance, while evaluators naturally are concerned with the complex problems of making their plans operational. The following alternatives should be considered as possible methods of evaluation.

Alternative 1: Use knowledgeable persons outside the system to evaluate the evaluation system.

Advantages:

- An objective view of the system obtained
- Credibility of the results to outsiders increased
- Strong support for improvements provided
- Possibility of extending procedures developed as an evaluation guide for other states

Disadvantages:

- Additional resources required
- Time required for orientation and understanding of people unfamiliar with the system
- Possible state preference for a continuing system, not one dependent upon outside input

Alternative 2: Have the evaluation staff, in conjunction with the state staff and others, develop a system for self-analysis of strengths and weaknesses of the evaluation system.

Advantages:

- Continued use and improvement of the system by the state
- State input as well as evaluation knowledge available for developing the system
- Development of a long-range plan for evaluation improvement made possible

Disadvantages:

- Time and effort of both evaluation staff and other state staff required
- Becomes imperative to provide a very objective procedure in order to avoid dangers of self-interest

Alternative 3: Base evaluation on judgment of users (state legislature, state agency management, state advisory council, local schools).

Advantages:

- Usefulness to users made the primary criterion
- People responsible for the decisions about vocational education and evaluation involved
- Feedback on changes needed in evaluation system provided

Disadvantages:

- Difference in the needs of the users
- Difficulty of anticipating needs

Recommendations and Observations

Different states will want to use different methods for evaluation of the evaluation system. Alternative 3, evaluation by users, should be strongly considered. A survey of these user groups could provide a checklist of expectations against which to judge evaluation efforts. Administrators of selected state education agencies identified the following items as being important in evaluation:

1. Consider evaluation based on other benefits of vocational education in addition to placement.
2. Evaluation should go beyond compliance and should consider state needs.
3. Evaluation should identify those programs that need help and suggest ways to improve them.
4. Data, along with evaluation, should be used as a basis for allocation of funds.
5. Evaluation should produce evidence that dollars spent in vocational education produce more payoff than dollars spent elsewhere. Payoff in terms of job training and employability should be reported.
6. Evaluation should provide solid evidence that vocational education makes a difference in jobs, pay, and upward mobility.
7. Evaluation should provide evidence for use in eliminating or redirecting programs.
8. Evaluation should describe program results in terms of placement.
9. Evaluation should determine competencies achieved by students.
10. Evaluation should measure how well teachers are doing in terms of student reactions, updating of course materials, contact with industry, and what students do with their training.

While these expectations are certainly challenging, and perhaps in some instances unrealistic, they provide an idealistic yardstick against which to measure the evaluation system. Any state planning to use this method should survey state and local administrators to determine their expectations and needs.

Consideration is also being given to Alternative 2, the development of criteria and procedures for state analysis of the evaluation system. Early thinking is centering on the specification of the essential characteristics of an effective evaluation system. The National Center staff has completed the preliminary work on identifying these essential characteristics. The input of other evaluation specialists at the National Center, state directors, and state evaluation specialists has been included. State input and acceptance of these characteristics would be the next step in implementing this procedure.

The next phase of the development of this evaluation analysis procedure will be to establish measures for each of these characteristics. When these measures have been reviewed, revised, and accepted, the state can proceed to gather data that, when used to measure the level of effectiveness of system characteristics, can give the state a profile that will indicate the strengths and needs of the evaluation system. This is a long-range effort that would require extensive effort but one that, when perfected, should be usable for many states.

Problem 14: To establish a relationship between evaluation and compliance

Legislation relating to vocational education (Education Amendments of 1976, Civil Rights Act, Vocational Rehabilitation Act) makes many demands on the state and local education agencies. The states are held responsible for their own compliance with related laws and regulations and for the actions of their subrecipients. This means that the state vocational agencies must know the extent to which each local program and institution is meeting the specifications of the various acts. The state is also responsible for the correction of any noncompliance at the local level and the reporting of any continuing discriminatory practices.

There is wide disagreement within the ranks of vocational educators and evaluators over the extent to which evaluation should be responsible for gathering information relating to compliance. On the surface the expression "Evaluation should never be involved with compliance," seems rational until alternatives are examined. Does the statement mean that evaluation should not be involved in determining the extent to which programs are effective for those participating in them?

Careful and thoughtful examination of all possible alternatives and results is called for in this difficult area.

Alternative 1: Give responsibility for compliance to one individual.

Advantages:

- Responsibility centered in one office, one individual
- Compliance enforcement avoided by evaluation, MIS, subject-matter specialists, etc.
- Source of information centered in one office

Disadvantages:

- Danger of isolation of compliance office
- Danger of dual information-gathering reviews of programs for evaluation and compliance
- Danger that other state staff members may feel no responsibility for assuring equity

Alternative 2: Give all sections (evaluation, MIS, planning, administration) specific responsibility for assuring compliance.

Advantages:

- Avoidance of dual system
- Inclusion of equity information as part of established systems
- General feeling of responsibility for assuring equity among staff

Disadvantages:

- Possible fear or resentment of local schools
- Increased work load for each section

Recommendations and Observations

It is reasonable and right that evaluation should strive to avoid the label of compliance enforcer; but by its very nature, evaluation becomes a process of measuring programs against some set of standards. The use of the term compliance is unwise in describing to schools the mission and purpose of evaluation; however, review of assessibility and effectiveness of programs for special populations does appear to be appropriate as a part of the work of evaluation.

Too often when one person or one part of the organization is put in charge of a particularly difficult program, two things are likely to happen: (1) that person or office becomes isolated through their own or others' actions, and (2) the rest of the staff claim no responsibility for this particular problem since it has been assigned to someone else. This has already happened in some states to the sex equity officer and the special-education supervisor.

Assuring equity and effectiveness for those individuals with special needs is a job requiring the best efforts of everyone in vocational education. Evaluation has an important role to play in this responsibility and, with the input of specialists, should develop one evaluation system to include all the clients of vocational education.

Problem 15: To secure commitment to evaluation

Evaluation, if it is to be more than just an empty gesture, must have the full support of state vocational administrators and staff as well as local educators. If, when asked about evaluation, everyone turns to the state evaluation coordinator with the comment, "It's done by that person," there may be reason to have doubts about the level of commitment. As is the case with so many of the newer supportive services for vocational education (research, planning, MIS, sex equity, special education, etc.), total staff involvement is necessary if the full benefits are to be realized.

Evaluators should be fully aware of their dependence upon the total staff support while emphasizing the contribution that evaluation can make to an improved vocational education system. Some alternative approaches to getting increased commitment are discussed below.

Alternative 1: Involve all those individuals expected to participate in the planning, revision, and operation of the system.

Advantages:

- Contribution to improved system made by several people
- Interest and dedication increased
- Feeling of "partnership" stimulated
- Objectionable features removed

Disadvantages:

- Time required
- Planning required
- Elimination of some preferred points
- Danger of misdirection

Alternative 2: Stress the need to fulfill requirements of the legislation.

Advantages:

- Immediate benefits seen by administrators
- Certain aspects of system supported

Disadvantages:

- Becomes *only* compliance activity
- Dependent on continuing legislation

Alternative 3: Determine the expectations of evaluation and build a system to meet them.

Advantages:

- Contribution seen by local and state administrators
- Staff recognition of potential contribution
- Less fear experienced by teachers

Disadvantages:

- Danger of developing unrealistic expectations
- Difficulty in determining realistic expectations
- Inability or unwillingness to state specific objectives

Alternative 4: Communicate fully evaluation results.

Advantages:

- Awareness of expectations met
- "Pay off" of evaluation recognized
- Administrators made aware of needs

Disadvantages:

- Time taken from other work
- Reluctance to have results fully known

Recommendations and Observations

Most individuals in education will agree with the idea of evaluation. The differences and reluctance seem to come when decisions are made as to what or who is to be evaluated and how it should be done. The problem of getting commitment seems to be one of demonstrating to several interested parties that the evaluation system will meet their expectations. Suggestions for achieving this are presented in the form of steps.

Step 1: Determine what is expected of an evaluation system.

Activity 1. Survey state administrators and staff on expectations.

Activity 2. Survey local administrators and vocational teachers on expectations.

Step 2: Determine extent to which present evaluation system is meeting expectations and changes needed.

Activity 1. Match the list under Alternative 1 against observable or predictable outcomes of evaluation.

Activity 2. Calculate additional resources needed to meet all reasonable expectations.

Activity 3. Identify parts of evaluation not helping to meet expectations.

Step 3: Select changes to be made in system.

Activity 1. Calculate resources freed by eliminating non-productive parts of system.

Activity 2. Ask administration to determine what additional resources can be allocated to achieve unmet expectations.

Activity 3. Initiate changes.

As administrators are asked to provide funds and others are asked to contribute time and effort, this list may be reduced again, but in this way it can be determined what the level of commitment is and what adjustments must be made. This procedure at least lets those individuals who are involved say what they want and what they are willing to work for and pay for.

After the evaluator has done all that can be done to secure commitment of resources and assistance, the system must be designed to get the greatest return for the amount invested. This process should show what can be bought with the dollars and time invested, and the point made that if more output is desired, greater input is required. We must face up to the fact that "we get what we pay for—and no more."

Problem 16: To increase emphasis on outcome evaluation.

Vocational educators are highly process-oriented. As skilled technicians, they have generally accepted the assumption that certain procedures lead to predictable outcomes. The process of running the bead or programming the computer has led to a weld of a certain strength or an expected treatment of the data. The inclination to depend upon and attempt to perfect the process has carried over to work in evaluation. It is assumed that programs can be effectively evaluated by observing the process as an indicator of quality. As a result, square footage, window number and placement, dollars spent, etc. have often become the criteria for evaluation. This faith in process has led vocational education to the assumption that if certain things are done with students, certain results will automatically follow. The predictability of student outcomes is much more complex than forecasting the results of a procedure in welding.

Effectiveness in evaluation depends upon the sorting out of those factors which show or demonstrate effectiveness and those factors which *may* influence effectiveness. While the number of contacts a teacher has with employers may appear to relate to student placement on jobs, it cannot be assumed that if a teacher has many contacts with employers that placement is high for that program. The only way to determine placement rate is to follow up completers of programs. In recommending what programs with low placement should do to improve, the program must be studied. It may evolve that increased employer contacts should be instituted. Thus, evaluation is done on the basis of the achievement of those factors which show quality (outcomes set for the program) while recommendations are made on the basis of those factors which are thought to cause quality (process).

Some alternatives for achieving more outcome-oriented evaluation are given below.

Alternative 1: Development and use of an individual student accounting system which includes enrollment, student characteristics, program progress, placement, and follow-up

Advantages:

- Student information available
- Outcome information available
- Data collection centralized
- Student progress information available

Disadvantages:

- Heavy data burden
- Expensive
- Lack of trust in centralized data system
- Information difficult to secure

Alternative 2: Provide evaluation teams or individuals with as much outcome data (from student accounting system) as is available.

Advantages:

- More complete view of program provided
- Study of process-outcome relationship possible
- Guide to process needing examination provided

Disadvantages:

- Training of team members required
- Danger of misuse or misinterpretation of data
- Overemphasis on one outcome

Alternative 3: Rank programs on basis of achievement of outcomes and provide assistance to less effective programs.

Advantages:

- Help provided for programs with greatest need
- Desired outcomes emphasized
- Guide to process review provided
- More objective evaluation given
- Knowledge of program objectives provided

Disadvantages:

- Embarrassment to low programs
- Lack of agreement on outcomes

Recommendations and Observations

Increased emphasis on outcomes does not mean that process is to be ignored. It does mean that process changes will be recommended in an attempt to improve outcomes. The effectiveness of process changes can be judged on the basis of the effect on outcomes. This seems to be the only rational reason for changing the process in a program.

Some states are identifying less effective programs on the basis of outcome data and concentrating improvement efforts on these programs. The programs with acceptable levels of outcome achievements are less in need of assistance. The expression "if it ain't broke, don't fix it" would seem to be appropriate in this instance.

CHAPTER III

SUMMARY AND CONCLUSIONS

A number of vocational education evaluation problems and alternative solutions are discussed in this report. These problems reflect: (1) the personal experience of the author in implementing and operating a state evaluation system; (2) the experience of providing technical evaluation assistance to several states; and (3) consultation, conversation, and survey of a number of state evaluation coordinators. The alternative solutions presented are largely drawn from the same reservoir of experience and interaction with the added input of the author's evaluation colleagues at the National Center for Research in Vocational Education.

As one views the list of problems which presumably reflect the situations in the states, some conclusions begin to emerge. Some basic, underlying principles which might be concluded are (1) evaluation depends heavily upon information; (2) to be effective, evaluation information must be communicated to many audiences; and (3) communication depends upon presenting information which is factual, timely, and understandable. Beyond this there are some approaches being developed and tried by states which show promise of solving many of the problems presently facing vocational education. Some mechanism should be developed which makes it possible for states to share experiences in evaluation.

State and local education agencies need to keep in mind the purpose of evaluation. As stated by the Congress in the Education Amendments of 1976, evaluation is to be done "in order for the state to assist local educational agencies in operating the best possible programs of vocational education." If evaluation does not result in *changes* in programs which benefit students, the intent has been thwarted and a lot of resources wasted. All of those involved in the evaluation effort – administrators, advisory committee members, evaluators, teachers, students, team members, and all others – can legitimately ask, "What is done differently as a result of evaluation and how will program output be improved as a result of these changes?"